THE INSTITUTE
FOR URBAN
FAMILY HEALTH

May 4,2007

Commission's Secretary
Office of the Secretary
Federal Communications Commission
9300 East Hampton Drive
Capitol Heights, MD 20743

Dear Sir or Madam:

I am pleased to submit an application on behalf of the Institute for Family Health (IFH) in response to the Federal Communications Commission Rural Health Care Support Mechanism Order (WC Docket No. 02-60). The original application and four copies are enclosed.

As a network of urban and rural community health centers, IFH represents an ideal model for this pilot program. With this application, we intend to further our goal of extending our current electronic health record (EHR) and practice management system from our New York City-based urban network to our newly affiliated rural network. Our EHR system has served as an important quality improvement tool within our network, and will greatly benefit the health care providers and patients of IFH's Mid-Hudson Valley network.

I appreciate your consideration of this application and look forward to your response.

Sincerely,

Neil S. Calman, M.D.
President & CEO

Enclosures

No. of Copies rec'd 0+4
List ABCDE

it' 16th Street • New York, NY 10003. (212) 633-0800

Application of the Institute for Family Health To the Federal Communications Commission Rural Health Care Support Mechanism WC Docket No. 02-60

I. Responsible Organization

The Institute for Family Health ("the Institute") will be legally and financially responsible for all activities supported by the Rural Health Care Pilot Program. The Institute is a network of urban and rural federally qualified health centers serving needy communities in New York City and the Mid-Hudson Valley, approximately two hours north of the metropolitan area. The Institute is comprised of the former Institute for Urban Family Health's network of practices and programs, and those of the recently acquired Mid-Hudson Family Health Institute. In January of 2007, the two organizations became a single entity which boasts **17** full-time and part-time health centers caring for approximately 70,000 patients and operates two family practice residency programs. We are currently working to expand the health information technology available in the New York City-based practices to those in the Mid-Hudson Valley, and to its other community-based programs.

New York City Campus

The Institute's New York City campus was founded in 1983 as the Institute for Urban Family Health, a non-profit organization dedicated to the development of innovative ways to provide primary health services to underserved urban populations based on the family practice model of care. The campus is comprised of eleven full-time and eight part-time community health centers located in the Bronx and Manhattan. Six of the New York City centers are in health professional shortage areas or serve a predominantly low-income or special needs population. The Institute also operates several New York City-based clinical programs serving special populations, including a Care for the Homeless program, and four Ryan White HIV/AIDS programs. The practices are supported by Epic, a comprehensive electronic medical records and practice management system, which was implemented in 2002. The system is described below.

The New York City campus also operates several health professional training programs that provide clinical experience in the care of vulnerable urban communities. The Institute operates the Beth Israel Residency in Urban Family Practice in partnership with Beth Israel Medical Center, and serves as the New York State Metropolitan Regional office of the New York State Area Health Education Center Program (AHEC), a federal program to enhance recruitment of health professionals into underserved areas and increase the diversity of the health professions workforce. These programs provide clinical training experiences for medical students and a range of other health professions students.

The elimination of racial and ethnic disparities in health outcomes is a central mission of the Institute. The Institute provides leadership for Bronx Health REACH (Racial and

Ethnic Approaches to Community Health), a CDC-funded program involving a coalition of over 40 diverse organizations. As part of REACH's research activities, focus groups were conducted in which Bronx community members identified issues that contribute to health disparities and distrust of the health care system. The Institute's leadership recognized that, when placed in the service of underserved communities, EHRs offer tremendous potential to improve health outcomes and to aid in the reduction of racially and ethnically based disparities. The implementation of the Institute's own EHR system incorporated findings from community focus groups on issues of provider-patient communication and trust.

The Mid-Hudson Valley Campus

The Mid-Hudson campus was originally founded in 1983 as the Mid-Hudson Family Health Institute, which has maintained its dual mission of providing quality health care services to at-risk and rural populations and training and recruiting primary care health providers in this region of New York State. Particular emphasis is placed on ensuring access to care for the Medicaid and uninsured populations living in Ulster and northern Dutchess counties.

The Mid-Hudson campus comprised a network of six health centers located in areas with defined unmet health needs and health risks such as lack of accessible health services, high rates of infant mortality, poverty, and lack of transportation to care. Some of these health centers are located in rural and semi-rural areas, while others serve residents in the cities of Kingston and Newburgh. The Mid-Hudson campus also operates Healthy Families/Healthy Start Programs, a Geriatric Home Visitor Program, and provides care to patients in a local nursing home.

The Mid-Hudson campus provides clinical training for 18 family physician residents at the Mid-Hudson Family Practice Residency Program, and has academic affiliations with New York College of Osteopathic Medicine and Albany Medical College. **As** a result of the work of this clinical campus, the Institute has been successful in recruiting **74%** of its family physician graduates into practice in New York State, many in rural, underserved communities. The Mid-Hudson campus played an integral role in the establishment of the Catskill-Hudson AHEC. It maintains a seat on the AHEC Board of Directors and contracts for the position of Executive Director. It has been involved in pipeline programs for many years, introducing high school and college level students to the health careers, and providing training opportunities to medical students and allied health professions students.

Over the past year, the leadership of the Mid-Hudson Family Health Institute recognized the need to change its organizational structure in order to meet its financial obligations, expand access to health care for the Medicaid and uninsured population in the region, and upgrade its technology. In light of their shared missions and to take advantage of combined organizational, financial, and technical capabilities, the two organizations joined together in early 2007.

The Institute for Family Health, the two campuses has become a fully integrated network with the following goals:

- To develop and operate family health facilities integrating the work of a broad range of health professionals and supported by state-of-the-art information technology;

- To train health professionals and other health workers in the family practice model of care;

- To engage in health services research related to primary health care delivery and primary care education;

- To formulate health policy in support of its direct patient care and educational goals; and

- To provide an environment that encourages personal and professional development for all, with a focus on expanding the diversity of the healthcare workforce.

2. Network Goals and Objectives

The overarching goal of the Institute's planned network expansion is to improve the quality and efficiency of care provided to the communities served by a network of urban and rural family practice centers through the use of health information technology and enhanced communication. Specific network objectives involve the implementation of a successful electronic health record (EHR) system at the community health centers throughout the Mid-Hudson Valley and other community sites, and attendant staff education and training. EHRs are a critical tool for making health information available to providers and patients when and where it is needed, and for providing evidence-based clinical decision supports during patient visits.

Objective 1: Implement the Epic EHR system at Mid-Hudson family practice sites.
The Institute plans to expand the availability of an ambulatory electronic health record and management system, EpicCare (Verona, Wisconsin), to its expanded network of family health centers in the Mid-Hudson Valley. The Institute will draw on its five years of experience in implementing the EHR at these six family practice centers. The EHR will also be implemented in the family practice service at the network's affiliated hospital and residency training site, Kingston Hospital.

The EHR will provide patients' medical records to providers when and where they need them. It will also serve as a critical quality improvement tool through a comprehensive system of clinical decision supports and interoperable applications. By spreading this resource across a large network of providers, the system can achieve economies of scale and provide state-of-the-art applications, technical support, training, and continuous quality improvement programming that would otherwise not be available to these sites.

Objective 2: Provide Portable EHR Access to Community-Based Providers.
As a network of community health centers, the Institute's mission is to provide health care for the most vulnerable members of the community. Current programs to meet this mission include the provision of care at eight sites that serve the homeless, a nursing home, several community hospitals and those served by the Geriatric Home Visitor Program. We plan to extend the same advantages to health care providers and patients at these settings as we provide to those who receive care at our networked health centers by equipping community providers with EHR access from laptop computers.

Objective 3: Conduct Remote Clinical Consultations.
The Institute will provide primary care providers with the ability to obtain electronic consults with specialty care providers. With locations in rural and semi-rural settings, many of the communities we serve have a limited number of specialists available at reasonable distances. Despite having a psychiatrist within our own network, many patients must travel over 60 minutes through mountainous terrain and secondary roads in order to receive a consultation. Through an Epic application known as AffiliateLink, our providers can efficiently share medical information with authorized specialists across the county or across the country. Secure messaging functions allow external physicians to offer electronic consults. This would be of particular benefit to patients of our most rural sites that often lack a full range of specialty care.

Objective 4: Provide Patient with Access to their Electronic Health Records and Health Education Materials.
A growing body of evidence demonstrates that involving patients in their own health care, especially among those with increasingly prevalent chronic illnesses such as diabetes, hypertension, and asthma, is vitally important for improving health outcomes. A key step in promoting patient self-management is ensuring that patients have access to their own health care information, as well as information that enhances their understanding of their condition and treatment plans.

The Institute will provide its patients with access to their own electronic health records through the Epic MyChart application. We also plan to provide a library of health education materials for patients to view online or download. Patients will be able to access these applications remotely from their own computers, or at patient computer stations located in the health centers. In addition to providing MyChart access to patients without internet access, the computer stations in the practices will enable patients to update their own information prior to their visit, thereby enhancing the efficiency of front desk operations.

Objective 5: Provide Tele-learning and Teleconferencing Technologies.
Its mission to both provide health care and to train health care professionals drives the Institute's need for tele-learning capabilities. As a network encompassing a wide geographic area – the Mid-Hudson family practice centers serve an area as large as the state of Rhode Island -- the education and training of staff in EHR use, best practices, and regulatory compliance will be greatly enhanced by the ability to participate in training remotely. The 42 residents at the Institute's two family practice training programs, as

well as the more than 100 medical students and other health professions students participating in the Institute's clinical education programs each year will benefit from remote participation in lectures, grand rounds, and other educational activities that are offered at other network sites and by affiliated hospitals and organizations. Institute providers will benefit from participation in web-based continuing medical education, such as those offered at the Institute's Manhattan-based New York Center for Professional Development.

The GotoMeeting and GotoWebinar applications developed by Citrix provide secure web-based conferencing that allows participants to view presentations and participate in discussions from any computer. One conference room at each campus will he equipped with video cameras for remote consultations requiring visual assessments, for viewing of clinical demonstrations, and to enable the recording of presentations and lectures for later viewing over the network. By eliminating travel time and facilitating participation in a variety of education and training activities, the Institute anticipates enhancing the skills and knowledge of its staff as well as their professional satisfaction.

Successful operation of the health care network requires careful coordination and communication among staff in different departments, programs, and sites. With nearly 500 staff members and 17 full-time health centers and various other program sites, easy access to teleconferencing technology is needed to ensure that the network and related programs and policies are implemented effectively across all sites. The Institute will provide conference lines to facilitate this communication.

3. Network Costs

The projected total costs for the network expansion are $3,557,504. Of this amount, the Institute is requesting funding from the Federal Communications Commission for $2,430,666, or ***68*** percent of the total cost. In addition to the summary budget provided in Table 1, detailed budgets for each program objective are subsequently presented in Tables 2 through 6. Program support of $1.27 million has been obtained from other sources, which are described in Section 5 of this application. Program expenses include network hardware and hosting, software, communications, personnel and consulting charges.

TABLE 1. PROJECT SUMMARY BUDGET

Objective	Hardware/ Hosting/ Communications	Software	Personnel/ Consulting	Total Cost Estimate	FCC Request	other Source of support
1. Electronic Health Record Expansion	888,254	1,494,000	429,482	2,811,736	**1,759,898**	**1,051,838**
2. Remote Clinical Consultations	36,000	95,720	105,647	237,367	**237,367**	**0**
3. Portable EHR Access	94.000	0	14,049	108,049	**83,049**	**25,000**
4. Patient Access to EHR **and** Health Education Materials	122,850	97,000	107,388	327,238	**327,238**	**0**
5. Telelearning/ Teleconferencing	69,600	*0*	3,515	73,115	**23,115**	**50,000**

TABLE 2.

Objective 1. EHR Expansion

	Base Rate	Units Required	Expense Year 1	Expense Year 2	Total Project Cost
Hardware					
PCs	950.00	78	74,100		74,100
Thin Clients	350.00	118	41,300		41,300
Monitors	250.00	196	49,000		49,000
Printers	575.00	188	108,100		108,100
Routers	4,000.00	6	24,000		24,000
Switches	2,000.00	11	22,000		22,000
Scanners	1,400.00	22	30,800		30,800
Jet Direct	100.00	188	18,800		18,800
MiniHubs	100.00	188	18,800		18,800
Metaframe Servers	4,000	12	48,000		48,000
Clarity Server	3,000				
Compuset Server	3,000				
Domain Server	3,000	2	6,000		6,000
Crystal Server	3,000				
Production SQL Server	10,085				
Test SQL Server	5,100				
eMail Server	5,000	2	10,000		10,000
Unix Server	65,000				
SAN Equipment	93,000	1	93,000		93,000
Misc Equip	20,000				
Installation Labor	120,318	0.1	12,032		12,032
Rack w/ power unit and mgmt	8,322	1			8,322
Total Hardware			**564,254**	**0**	**564.254**
Hosting					
Hosting Charges	48,000		48,000	48,000	96,000
Frame Relay Circuits	6,000	17	102,000	102,000	204,000
Broadwing Circuits	12,000		12,000	12.000	24,000
Total Hosting			**162,000**	**162,000**	**324,000**
Software					
Epic License Maintainance	540,000	1	540,000	540,000	1,080,000
Citrix Licenses	225	350	78,750	78750	157,500
Cache Licenses	75,750	1	75,750	75750	151,500
Microsoft Licenses	20,000	1	20,000	20000	40,000
Crystal	15,000	1	15,000	15000	30,000
Other 3rd Party Licenses	17,500	1		17500	35,000
Total Software			**747,000**	**747,000**	**1,494,000**

Table 2 (cont.)

Personnel	Base Rate Hourly Rate	Hours Worked Yr 1	Personnel Cost - Yr 1	Personnel Cost -Yr 2	Personnel Total
Management	86	200	17,245	1,724	18,969
Business Analyst	34	975	67,255	67,255	134,510
Clinical Business Analyst	50	975	97,003	97,002	194,005
Help Desk	23	50	1,161	464	1,625
System Admin.	63	300	18,903	1,260	20,163
Network Admin	53	200	10,612	1,061	11,673
PC / Network Support Tech	30	400		597	12,536
Total Personnel			**224,117**	**169,365**	**393,482**
Consuling					
Epic Consulting Charges	225	100	22,500		22,500
CIS Consulting Charges	135	100	13,500		13,500
Other Consulting					
Total Consulting Expenses			**36,000**	**0**	**36,000**
Total EHR Expansion			**1,733,371**	**1,078,365**	**2,811,736**

TABLE 3.

Objective 2. Remote Consults/AffiliateLink Implementation Budget

	Base Rate	Count	Expenses Year 1	Expenses Year 2	Total Project Costs	Budget Notes
Hardware & Hosting						
Web Servers	4,000	2	8,000		8,000	Dell 1850s
SAN Equipment	18,000	1	18,000		18,000	Additional Rack and 5@300GB.
Misc Equip	10,000	1	10,000		10,000	Routers, Switches, etc
Total Hardware			**36,000**	**0**	**36,000**	
Software						
Epic Licenses Purchase	40,720	1	40,720	0	40,720	Subscription Based
Epic Licenses Maintenance	5,000			5000	5,000	
Microsoft Licenses	20,000	1	20,000	20,000	40,000	SQL Server, IIS, Client Access Licenses
Other 3rd Party Licenses	5,000	1	5,000	5,000	10,000	Backup Software, Web Page Development Software
Total Software			**65,720**	**30,000**	**95,720**	
Personnel						
Staff	**Hourly Rate**	**Hours Worked**				
Management	86.22	20	1,724	0	1,724	
Business Analyst	34.49	25	862	0	862	
Clinical Business Analyst	49.74	200	9,949	9,949	19,898	
Help Desk	23.21	25	580	0	580	
Systems Admin.	63.01	200	12,602	12,602	25,204	
Network Admin	53.06	10	531	0	531	
PC / Network Support Tech	29.85	20	597	0	591	
Total Personnel Expenses			**26,846**	**22,551**	**49,397**	
Consulting						
Epic Consulting	225.00	235	52,875		875	
CIS Consulting	135.00	25	3,375		3,375	
Total Consulting			**56,250**		**56,250**	
Total AffiliateLink Implementation			**184,816**	**52,551**	**237,367**	

TABLE 4.

Objective 3. Remote EHR Access

	Base Rate	Count	Expenses - Year 1	Expenses - Year 2	Total Project Costs
Hardware & Hosting					
Laptops	2200	25	55,000		55,000
Verizon Cards	780	25	19.500	19500	39.000
Total Hardware			**74,500**	**19,500**	**94,000**
Personnel					
Staff	**Hourly Rate**	**Hours Worked**			
Help Desk	23.21	20	464		464
Systems **Admin.**	63.01	10	630		630
Network Admin	53.06	10	531		531
PC /Network Support Tech	29.85	200	5.969	5.969	11.939
Total Personnel Expenses			**7,594**	**5,969**	**13,564**
Consulting					
Epic Consulting Charges	225.00	1	225		225
CIS Consulting Charges	135.00	1	135		135
Other Consulting	125.00	1	125		125
Total Consulting Expenses			**485**		**485**
Total MyChart			**82,579**	**25,469**	**108,049**

TABLE 5.

Objective 4. Patient EHR Access/MyChart Implementation Budget

	Base Rate	Count	Expense Year 1	Expense Year 2	Total Project cost
Hardware & Hosting					
PCs	950	50	47,500		47,500
Monitors	250	50	12,500		12,500
Web Servers	4,000	2	8,000		8,000
SAN Equipment	18,000	1	18,000		18,000
Misc Equip	10,000	1	10,000		10,000
Total Hardware			**96,000**	**0**	**96,000**
Software					
Epic Licenses Purchase	2.35	10,000	23,500	23,500	47,000
Microsoft Licenses	20,000	1	20,000	20,000	40,000
Other 3rd Party Licenses	5,000	1	5,000	5,000	10,000
Total Software			**48,500**	**48,500**	**97,000**
Computer Furniture					
Computer desks	352	50	17,600		17,600
Computer chairs	80	50	4,000		4,000
Delivery & Installation - Mid-Hudson	165	20	3,300		3,300
Deliver & Installation - New York City	65	30	1,950		1,950
Total Computer Furniture			**26,850**	**0**	**26,850**
Personnel Expenses					
Staff	**Hourly Rate**	**Hours Worked**			
Management	86.22	50	4,311		4,311
Business Analyst	34.49	100	3,449		3,449
Clinical Business Analyst	49.74	100	4,974		4,974
Help Desk	23.21	400	9,286	9,286	18,571
Systems Admin.	63.01	200	12,602	12,602	25,204
Network Admin	53.06	10	531		531
PC / Network Support Tech	29.85	20	597		597
Total Personnel Expenses			**35,750**	**21,888**	**57,638**
Consulting					
Epic Consulting Charges	225.00	50	11,250		11,250
CIS Consulting Charges	135.00	100	13,500		13,500
Other Consulting	125.00	200	25,000		25,000
Total Consulting Expenses			**49,750**		**49,750**
Total My Chart			**256,850**	**70388**	**327,238**

TABLE 6.

Objective 5. Telelearning and Teleconferencing Budget

	Base Rate	Users/Units	Minutes	Expenses Year 1	Expenses Year 2	Total Project costs
Telelearning						
GoTo Meeting	10,200	15		10,200	10,200	20,400
Video **cameras**	600	2				1.200
Total Telelearniog				**11,400**	**10,200**	**21,600**
Teleconferencing						
Simple Toll Free	0.06	200	2000	24,000	24,000	48,000
Total Teleconferencing				**24,000**	**24,000**	48,000
Total Communications Costs				**35,400**	**34,200**	**69,600**
Personnel						
Staff	**Hourly Rate**	**Hours Worked**		**Total**		
Help Desk	23.21	50		1,161	1161	2,321
PC / Network Support Tech	**29.85**	20		597	597	
Total Personnel				**1,758**	**1758**	**3,515**
Total Telelearning and Teleconferencing Costs				**37,158**	**35,958**	**73,115**

4. For-Profit Network Participants

There are no for-profit entities participating in the Institute's network.

5. Sources of Financial Support

The Institute has obtained grant support from several sources that will contribute to the financing of this initiative.

HEAL Grant

New York State provides grant funding for the development of health information technology on a regional level through the Health Care Efficiency and Affordability Law for New Yorkers Capital Grant Program, known as the "HEAL NY" program. The institute has received $751,838 through HEAL in a cooperative initiative with the New York City Department of Health and Mental Hygiene/Community Health Exchange Project (CHEX) to create network infrastructure for access to information systems, claims databases, laboratories and pharmacies and clinical data exchange, with a focus on primary care and patients in underserved areas with chronic conditions.

New York State Office of Rural Health
The State Office of Rural Health has awarded the Institute a $200,000 grant to support strategic planning, telelearning and telecommunications, and staff training related the development of the network.

Primary Care Development Corporation
The Primary Care Development Corporation (PCDC) is a government, private, and philanthropic collaborative created to address the lack of primary and preventive healthcare in economically distressed communities in New **York.** In addition to providing access to over $178 million in capital, PCDC provides grants to assist health centers in becoming efficient, patient-centered enterprises. The Institute has received $300,000 in support to expand its EHR network and secure its infrastructure.

6. Health Care Facilities in the Network

This application proposes to incorporate the following health care facilities into the existing Institute for Family Health network:

Family Practice Center of Kingston: **A** multi-specialty care center that includes a group family practice, Behavioral Health Specialty service, a Dental Care Center and a Pediatric Care Center. The health center is located in the City of Kingston and provided 44,798 patient visits across all specialties in 2006. The center is the major ambulatory care training site of the Mid-Hudson Family Practice Residency Program, as well as for the undergraduate medical and allied health care students on rotation at the Institute's clinical campus. The health center's location is approximately a 10 minute drive to Kingston Hospital where our in-patient resident training programs are housed. While located within the limits of the City of Kingston, this center serves communities within a radius of 20 miles, all located in the rural designated county of Ulster.

Family Practice Center of New Paltz: This full-time health center occupies 11,000 square feet and is located in the Village of New Paltz in the rural county of Ulster. The service area is within a 20 mile radius of the health center and its population represents *33%* of the people living in Ulster County. In addition to primary health care services, this building also "houses" specialty care services from local Kingston specialists in cardiology, neurology, oncology, orthopedics and occupational and environmental health. In addition, physical therapy services are provided by St. Luke's Cornwall Hospital. The Family Practice Center of New Paltz provided 30,847 visits in 2006. **As** with Kingston, the New Paltz site is an ambulatory care training site, providing clinical rotations for medical students throughout the year.

Family Practice Center of Hyde Park: The Institute originally assumed the operations of this health center in January, 1996. Previously, the service was designated as an outpatient department of a local hospital, and is now the only diagnostic and treatment center serving northern Dutchess County residents. Since taking over the practice, the Institute relocated the service to a more rural area within the town and provides services

in the specialties of family practice, pediatrics, geriatrics, infectious disease and podiatry. The total number of visits for this health center in 2006 was 22,384.

Family Practice Center of Ellenville: This center was established in 1998 and received Rural Health Clinic designation in 2005. This 10,700 square foot center is located on the grounds of the Ellenville Regional Hospital. It is a group practice of providers in the specialties of family practice, pediatrics, geriatrics, women's health and podiatry. In addition, a full-time physician assistant and a social worker provide behavioral health services. This practice provides the majority of health care services to this rural, medically indigent community, totaling 16,057 visits for 2006. Also, this center houses the Dental Care Center of Ellenville, which provided 3,460 visits in 2006. Seventy percent (70%) of the dental visits were provided to persons with Medicaid, Medicare/Medicaid and the uninsured. This center is also a major site for student training, particularly for students seeking a rural family practice experience.

Family Practice Center of Port Ewen: Previously the private practice of a 1989 graduate of the Institute's residency program, this practice was incorporated into the Institute's network of health centers in 1999. It is located in a small community outside Kingston, New York. Primary care services are provided by a family physician and a nurse practitioner. This practice provided 4,180 visits in 2006.

Specialty Care Center of Kingston: Located in The Kingston Hospital in the heart of downtown Kingston, New York, the Specialty Care Center of Kingston provides obstetrical/gynecological and dermatology services. Staffed by a full-time obstetrician and nurse midwife and a part-time dermatologist, this center provided 8,030 visits in 2006. Many of these visits were provided to persons with Medicaid, Medicare/Medicaid and the uninsured.

Kingston Hospital Family Practice Service: The 20-bed family practice in-patient service at The Kingston Hospital provides continuing care for family practice patients and is a training site for the Mid-Hudson Family Practice Residency Program.

The network currently serves the Institute's New York City campus, which includes nine full-time Federally Qualified Health Centers, an Article 31 counseling center, a school-based health center, and eight part-time health centers located throughout the Bronx and Manhattan. The six Bronx health centers include the Urban Horizons Family Health Center, Walton Family Health Center, Mt. Hope Family Practice, Parkchester Family Practice, Westchester Avenue Center and the River Center for Counseling. The Bronx sites serve an area that includes more than 12 ZIP code areas, 4 community districts, and 137 census tracts, of which 80 are designated as medically underserved areas (MUAs).

The Institute's Manhattan centers include Amsterdam Center, East 13th St. Family Practice, Philips Family Practice, Sidney Hillman Family Practice, and the Washington Irving School-Based Health Center. Additional health services are provided by the Institute at eight part-time sites located throughout Manhattan that serve homeless populations. These sites include Valley Lodge, George Daly House, Project Reachout, All Angels Church, Broadway Presbyterian Church, McAuley New York City Rescue

Mission, Ali Fomey Center, and The Senate. The service area for the four full-time Manhattan-based health centers comprises ten ZIP code areas, 3 community districts, and 72 census tracts, of which 29 are designated as MUAs.

The majority of residents in communities served by the Institute's New York City practice sites are poor, face significant health problems, and are predominantly black and Latino. Many of these patients are medically underserved and suffer disproportionately from **an** array of health problems prevalent in low income urban areas, including high rates of asthma, diabetes, hypertension, obesity, depression, substance abuse and HIV/AIDS. **A** total of 34,000 patients were served in 2006 by all sites of the Institute's New York City campus. These patients made 109,000 visits for medical and dental services, and roughly 5,400 visits for case management, health education, and social services.

7. Health Care Facility Locations

New Network Sites

The locations for sites that will be added to the Institute's network are detailed below. The RUCA codes provided were calculated by the University of Washington's Rural Health Research Center, Version 2.0, 2006. In addition to the Mid-Hudson Valley health centers, the network expansion will include remote access that will enable providers working at community-based sites across the network area to access the EHR and other network tools.

1. Health Center	Towns Served	ZIP Code	RUCA Code
Family Practice Center of Ellenville	Accord	12404	3
50 Shop Rite Blvd., P.O. Box 631	Ellenville	12428	7.3
Ellenville, New York 12428	Kerhonkson	12446	3
845-647-4500	Napanoch	12458	7.3
	Spring Glen	12483	*
	Wawarsing	12489	*
	Grahamsville	12740	10.6

2. Health Center	Towns Served	ZIP Code	RUCA Code
Family Practice Center of Hyde Park	Clinton Comers	12514	2
11 Crum Elbow Road	Hyde Park	12538	1
Hyde Park, New York 12538	Pleasant Valley	12569	1
	Red Hook	12571	7.3
	Rhinebeck	12572	3
	Salt Point	12578	2
	Staatsburg	12580	2
	Stanfordville	12581	2
	Tivoli	12583	7.3
	Wappingers Falls	12590	1
	Poughkeepsie	12601	1
	Poughkeepsie	12603	1

3. Health Center
Family Practice Center of Kingston
1 Family Practice Drive
Kingston, New York 12401
845-338-6400

Towns Served	ZIP Code	RUCA Code
Kingston	12401	1
Accord	12404	3
Connelly	12417	*
Hurley	12443	1
Kerhonkson	12446	3
Lake Katrine	12449	1
Port Ewen	12466	1
Rosendale	12472	1
Saugerties	12477	2
Shokan	12481	2
Stone Ridge	12484	2
Ulster Park	12487	2.1
West Hurley	12491	2
Woodstock	12498	2
New Paltz	12561	2

4. Health Center
Family Practice Center of New Paltz
279 Main Street, Suite 102
New Paltz, NY 12561
845-255-2930

Towns Served	ZIP Code	RUCA Code
Kingston	12401	1
High Falls	12440	2
Rosendale	12472	1
Saugerties	12471	2
Tillson	12486	1
Ulster Park	12487	2
Clintondale	12515	2
Gardiner	12525	2
Highland	12528	1
Milton	12547	1
Modena	12548	2
Newburgh	12550	1
New Paltz	12561	2
Plattekill	12568	*
Wallkill	12589	1
Poughkeepsie	12601	1

5. Health Center
Family Practice Center of Port Ewen
P.O. Box 628
Port Ewen, New York
845-331-2355

Towns Served	ZIP Code	RUCA Code
Kerhonkson	12446	3
New Paltz	12561	2
Esopus	12429	*
Lake Katrine	12449	1
Connelly	12417	*
Hurley	12443	1
Woodstock	12498	2
Saugerties	12477	2
Ulster Park	12487	2.1
Port Ewen	12466	1
Kingston	12401	1

6. Health Center
Specialty Care Center of Kingston

Towns Served	ZIP Code	RUCA Code
Kingston	12401	1
Accord	12404	3
Connelly	12417	*
Hurley	12443	1
Kerhonkson	12446	3
Lake Katrine	12449	1
Port Ewen	12466	1
Rosendale	12472	1.1
Saugerties	12477	2
Shokan	12481	2
Stone Ridge	12484	2
Ulster Park	12487	2.1
West Hurley	12491	2
Woodstock	12498	2
New Paltz	12561	2

*No **RUCA** code **available**

Existing Network Sites

The locations of the existing network sites are detailed below. These are urban sites which have a calculated RUCA code of 1.0.

7 Amsterdam Center
690 Amsterdam Avenue
New York, NY 10025
212-865-4104

8 East 13''St. Family Practice
113 East 13'' Street
New **York,** NY 10003
212-253-1830

9 Phillips Family Practice
16 East 16'' Street - 1st Floor
New York, NY 10003
212-206-5200

10. Sidney Hillman Family Practice
16 East 16'' Street – 3rd Floor
New York, NY 10003
212-924-7744

11. Washington Irving School-Based Health Center
40 Irving Place, Room 422
New York, NY 10003
646-654-0640

12. Mt. Hope Family Practice
130 West Tremont Avenue
Bronx, NY 10453
718-583-9000

13. Parkchester Family Practice
1597 Unionport Road
Bronx, NY 10462
718-822-9144

14. River Center for Counseling
8800 River Avenue, Suite 4
Bronx, ▼ ▼ 10452
718-538-6158

15. Urban Horizons Family Health Center
50 East 168'' Street, Lower Level
Bronx, ▼ ▼ 10452
718-293-3900

16. Walton Family Health Center
1894 Walton Avenue
Bronx, NY 10453
718-583-3060

17. Westchester Avenue Center
1990 Westchester Avenue
Bronx, NY 10462
718-239-1610

8. Telemedicine Experience

Epic EHR System

The Institute installed EpicCare (Verona, Wisconsin), one the premier systems for ambulatory electronic health records and practice management, at its New York City family health centers in 2002. Epic is used by some of the nation's best established medical programs, such as Gessinger Medical Group and Kaiser Permanente, and was ranked first among 40 systems evaluated by the American Academy of Family Physicians. The Institute is the first community health center in New York City, and one of only a few nationally, to implement an EHR.

Using EpicCare, Institute providers electronically generate laboratory and radiology requisitions and retrieve test results, maintain problem, diagnoses, and medication lists, and trend lab results and other data over time. All prescriptions are generated through the EHR, which is also programmed to identify generic or less expensive brands of medication, reference the drug formularies of the patient's health plan, offer guidelines and evidence-based recommendations when prescribing medications, screen for drug allergies and drug-drug interactions, and provider patient-friendly information ahout the medication to the patient.

The Epic EHR is fully implemented at all of the health centers in the Institute's New York City campus, and contains over 500,000 electronic records of patient visits. The EHR has allowed the Institute to dramatically enhance its system of services, and to significantly improve patient care. The new EHR system has enhanced the quality of patient care provided at the Institute's sites, demonstrably increasing compliance with preventive care guidelines. Much of this improvement is due to the implementation of "best practice alerts," or clinical decision supports based on researched clinical recommendations.

Clinical Decision Supports

Electronic clinical decision supports, also known as best practice alerts, are based on basic evidence-based guidelines such as annual pap smears, and obtaining mammograms, flu vaccines, and blood sugar testing for diabetics at the recommended intervals. When these alerts are installed in the medical record system, the system triggers a message to the provider when the guidelines have not been followed. This alert system serves as a powerful reminder to both patients and physicians that an important preventive health opportunity has been missed. For example, if a diabetic patient has not seen an ophthalmologist in 12 months, the alert system will remind him and his doctor that this visit is necessary. These reminders are critical when providing care to vulnerable populations, who, for a variety of reasons, may not have obtained important follow-up care.

Best practice alerts promote patient-provider communication by reminding both providers and patients that a particular procedure is recommended (e.g., a colonoscopy) or prompting a discussion ahout why a patient who has been referred has not obtained the recommended procedure. Several clear examples of performance improvements in the

chronic care of patients in our practices can be reported. These occurred in the months following the implementation of best practice alerts in the electronic medical record system at the Institute's New York City health centers, and include an 18-fold increase in the rate of pneumococcal vaccines and a 55 percent increase in the rates of referrals for ophthalmology appointments for diabetic patients.

Health Services Research

The system has also allowed the Institute to develop cutting edge health services research. The Institute, which is also established as a practice-based research network registered with DHHS' Agency for Health Care Research and Quality, has already begun a number of research projects to innovate, demonstrate and evaluate the many healthcare improvements that are enabled through the electronic capture, processing and reporting of patient care information. For example, the Institute has partnered with the New York City Department of Health and Mental Hygiene to integrate its practice network data with the City's Syndomic Surveillance System and immunization and lead registries, and to pilot the incorporation of the City's public health priorities, known as ***Take Care New York,*** into the clinical decision support and reporting EHR programming.

The Institute has been recognized for its leadership in health information technology. Dr. Neil Calman, CEO, received the 2006 Physician's IT Leadership Award from the Healthcare Information and Management Systems Society (HIMSS), has made numerous presentations regarding EHR use and improving health care for vulnerable populations, and published several related articles.[1,2]

9. Project Management

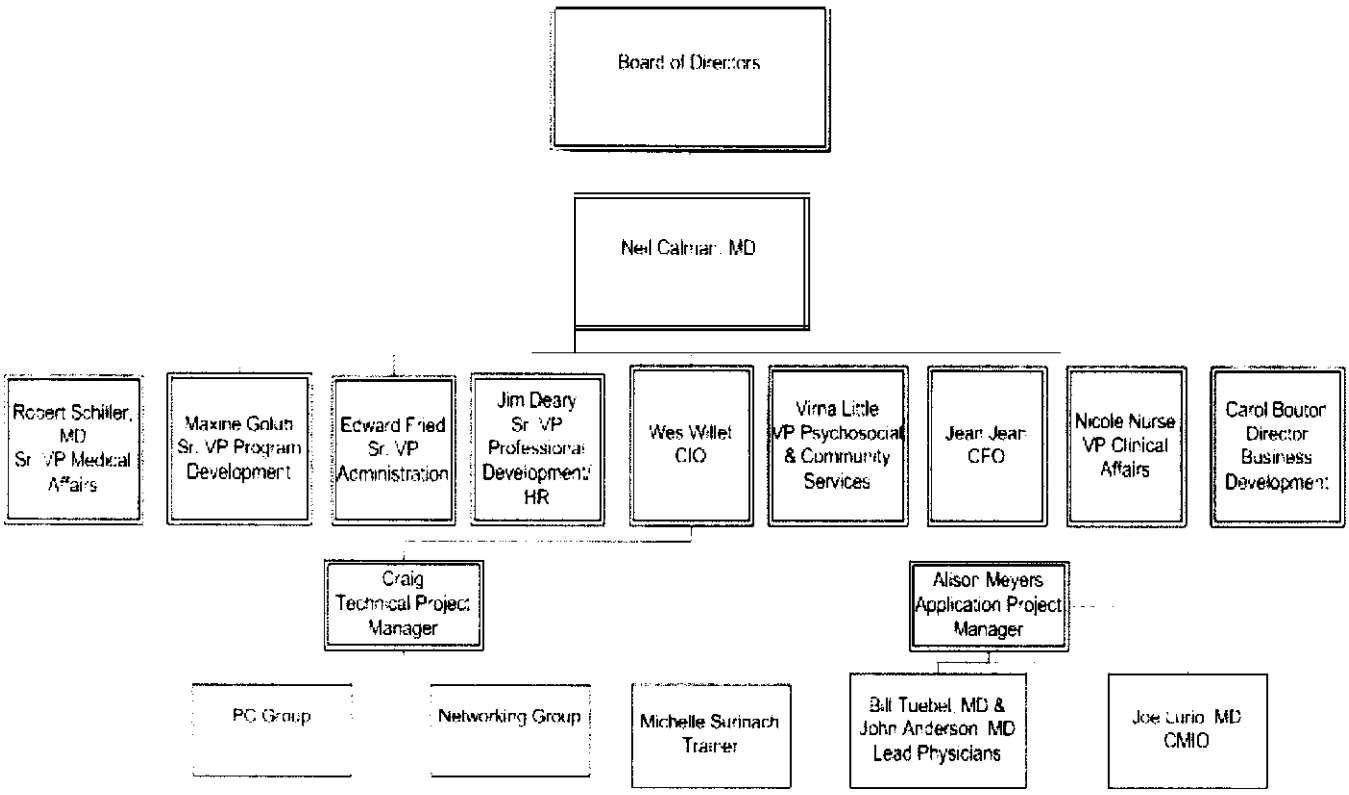
The Institute's EHR Expansion Program will be managed by a Project Technical Team and a Project Applications Team working together to implement the EHR at the Mid-Hudson Valley practice sites, and other community-based sites. The Technical Team will be managed by Craig Mesches, information technology manager for the Mid-Hudson campus. The Applications Team will be managed by Alison Meyers, the applications project manager. The Institute's chief medical information officer, Joe Lurio, M.D., along with a team of senior physicians will provide clinical leadership for the applications team. Nicole Nurse, RN, the Institute's Vice President for Clinical Affairs, will manage compliance and staff training. Both teams will be overseen by Weston Willett, the Institute's chief information officer, who will provide direct management for the project. Neil Calman, MD, the Institute's President and CEO, will actively participate in the implementation of the program, providing vision and ensuring the overall success of the project.

---

[1] C a l m NS, Kitson K, Hauser D. Using Health Information Technology to Improve Health Quality and Safety in Community Health Centers. *Journal of Progress in Community HealfhPartnerships: Research Education and Action.* Spring *2007* 1(1):83-88.

[2] Calman, NS, Goluh M, Kitson K, Ruddock C. Electronic Health Records: The **Use** of Technology to Eliminate Racial Disparities in Health Outcomes. In: *Medical Informatics: An Executive Primer.* Health Information and Management Systems Society, Chicago, IL. Kenneth Ong, MD, Editor. January 2007.

Figure 1. Project Organization Chart



Kev Program Management Staff:

Neil Calman, M.D., the Institute's President and CEO, provided the initial vision for the Institute's adoption of electronic health records, and is a leader in the use of EHRs to improve the quality of health care in underserved communities. Dr. Calman participates actively in local, state, and national forums on the adoption and assessment of electronic health records. He serves on the Executive Committee of New York City's Primary Care Health Information Consortium and the New York State e-Health Consortium, a statewide group that examines policy regarding the use of health information technology. On the national level, Dr. Calman participates on the National Quality Forum Ambulatory Care Measures Disparities Subcommittee. Dr. Calman, a practicing family physician, continues to be a driving force behind the use of clinical decision supports and other applications to use EHRs as a tool to improve health care. He will ensure that the organizational resources and commitment are utilized to achieve successful implementation and management of the EHR expansion into the Institute's Mid-Hudson Valley campus.

Weston Willett, the Institute's Chief Information Officer, will serve as the Project Manager for this initiative. Mr. Willett provides leadership for the development and implementation of the Institute's information technology initiatives to improve cost effectiveness, health care service quality, and business development in a constantly changing, competitive marketplace. He will utilize his experience managing the Institute's electronic health records and information management system, overseeing distributed and centralized clinical and business operations, in the management of the EHR expansion project. Prior to joining the Institute, Mr. Willett worked with Kaiser Permanente, APMC, and MedPartners in the management of the Epic system.

Alison Meyers, the Applications Project Manager, serves as the Institute's Business Systems Manager. In this capacity, she will be responsible for the programming and implementation of Epic at the Mid-Hudson sites, as well managing the training and technical support for the system. Ms. Meyers has a track record of successfully implementing software applications and upgrades for seven large physician practices with multiple, nationwide locations.

Craig Mesches, the Technical Project Manager, will direct the Networking and PC Groups in implementing the information and telecommunication system expansion. Mr. Mesches, a senior manager at the Institute, directed the implementation of the Mid-Hudson campus' electronic practice management system. He has extensive experience in corporate development issues within the Institute, and prior experience as a digital design engineer.

10. Program Coordination Throughout Region

Program coordination will occur daily between the Technical Team and the Applications Team. The Technical Team will consist of a networking group and a PC group which will be responsible for equipment and configuration, installing all hardware, design and layout of all wiring/cabling for all sites, establishment of network connectivity, and follow-up with hosting companies. In addition, ongoing desktop support and installation of new/upgraded software will be provided. The Applications Team will direct systems programming, the clinical conversion to electronic health records, staff training, and quality improvement mechanisms. These activities will include:

- workflow gap analysis;
- clinical interfaces;
- addition of new material to the master file
- custom Epic programming for integration of new material;
- basic and advanced computer training and support
- regression testing; and
- optimizing activities to evaluate level of efficiency.

The tasks for each program objective will be implemented throughout the program sites according to the proposed timetable (See Table 7). Each major activity will be

implemented across all sites simultaneously so that planning, installations, trainings, and other **key** tasks can be carried out in an efficient and coordinated manner.

TABLE

Task	1-Jul	1-Oct	1-Jan	1-Apr	1-Jul	1-Oct	1-Jan	1-Apr
Objective 1. EHR Expansion								
Planning	→							
Equipment Purchase	→							
Installation	→							
Incorporate Existing Records	→							
Staff Training		→	→					
Pilot Test		→						
Implement EHR		→						
Monitoring			→	→	→	→	→	→
Technical Support		→	→	→	→	→	→	→
CQI analysis					→	→	→	→
Objective 2. Remote Consult/Affiliate Link								
Planning	→	→						
Staff Training			→					
Implement Affiliate Link			→					
Pilot Test			→					
Technical Support				→	→	→	→	→

ABLE 7. (Cont.)

Task	1-Jul		-Jan	1-Apr	1-Jul	1-Oct	-Jan	1-Apr
Objective 3. Remote EHR Access								
Planning	→							
Purchase Equipment		→						
Staff Training		→						
Implement EHR			→					
Technical Support			→	→	→	→	→	→
Objective 4. Patient EHR Access/ My Chart								
Planning	→		→					
Purchase Equipment			→					
Design/Programming			→					
Staff Education/Training				→				
Implement MyChart				→				
Pilot Test				→				
Technical Support				→	→	→	→	→
Objective 5. Telelearning/ Teleconferencing								
Planning	→							
Purchase Equipment	→							
Implement	→							
Technical Support	→	→	→	→	→	→	→	→

11. Sustaining the Network

The largest hurdle to the expansion of the Institute's network into its Mid-Hudson Valley sites and community-based programs is the associated start-up costs, as detailed in the proposed project budget. The Institute's experience with the implementation of the EHR in its New York City network bear out the need for initial funding for implementation. Ongoing maintenance costs can then be absorbed as operating expenses.

Several aspects of the proposed project are expected to enhance efficiency. Patient computer stations in the health centers will enable patients to update their demographic information and print out health information from their own records, such as children's immunization history, freeing up providers and office staff for other duties. Teleconferencing and telelearning capabilities will facilitate staff coordination and communication among health services and enhance educational opportunities, and will also reduce lost time due to travel. Programs serving transient populations at a variety of sites will have the benefit of a centralized EHR that will eliminate duplicative services. Some pre-implementation costs, such as maintaining a medical records deparhnent, will be shifted to the maintenance of the EHR.

The Institute has actively sought, and secured, grant funding to support initiatives related to the EHR such as the development of clinical decision supports and integration with public health registries. Over the longer term, we anticipate that the investment in a networked electronic health records system will provide financial benefits to the institution as insurers move toward pay-for-performance payment systems. The system both supports and documents health care quality improvement initiatives and outcomes.